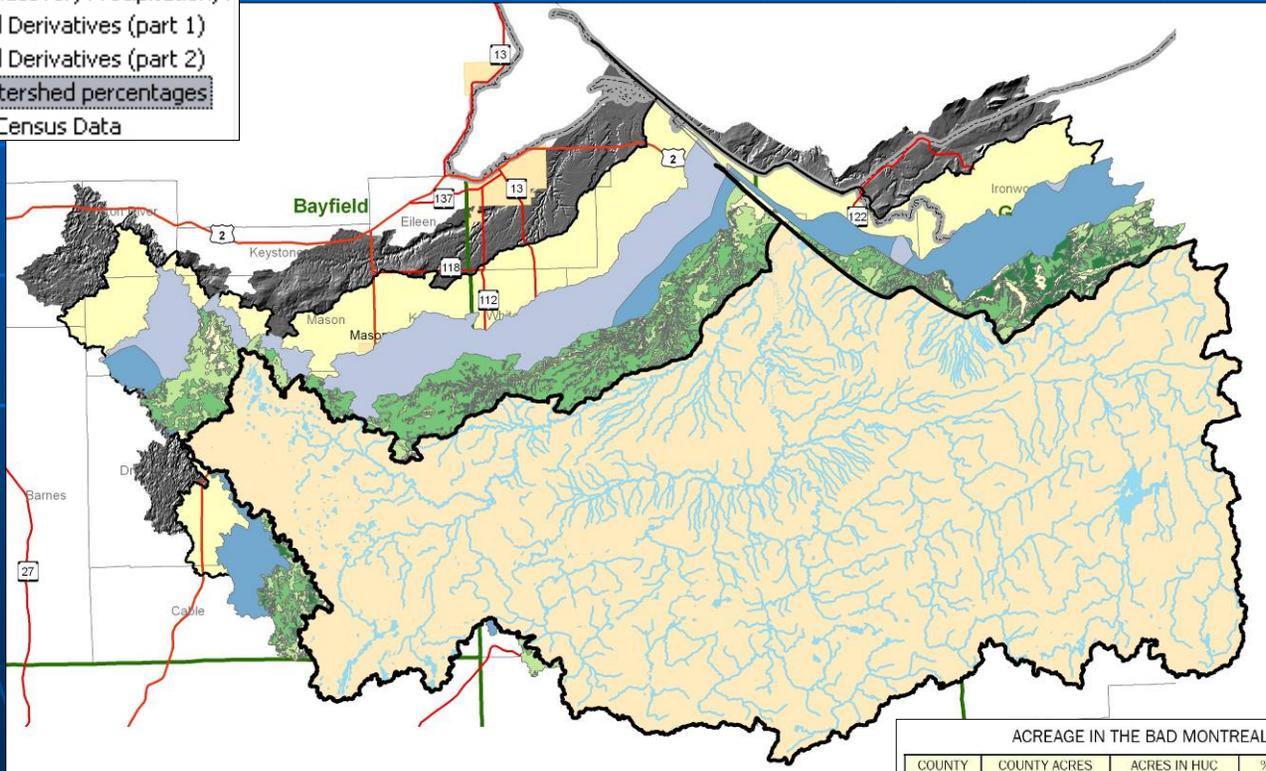


Rapid Watershed Assessments

GIS, Data, and Cartographic Elements

- Watershed_Tools
- ▶ Create Landcover, Precipitation, I
 - ▶ Create Soil Derivatives (part 1)
 - ▶ Create Soil Derivatives (part 2)
 - ▶ Create watershed percentages
 - ▶ Generate Census Data

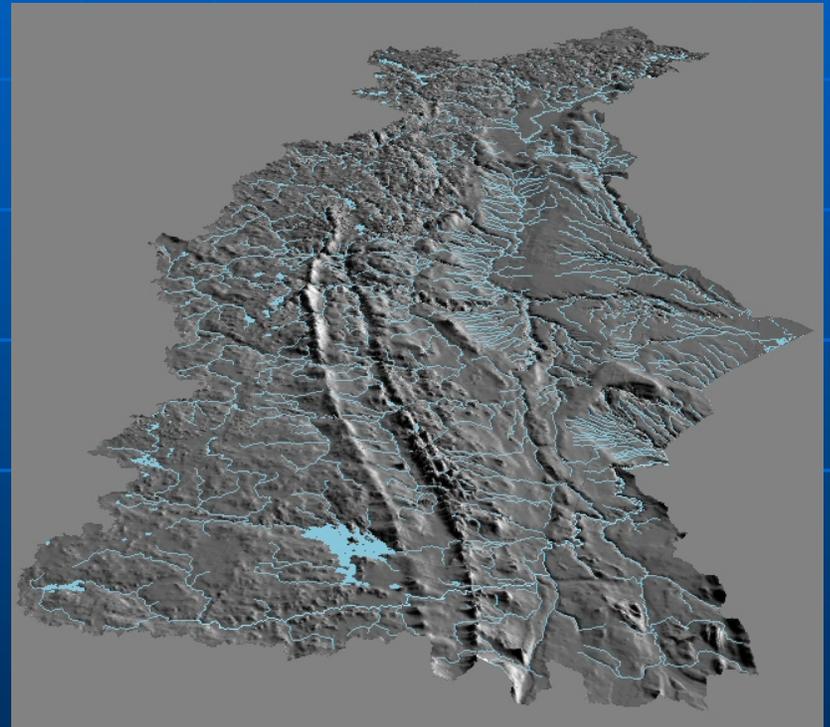


ACREAGE IN THE BAD MONTREAL RIVER WATERSHED

COUNTY	COUNTY ACRES	ACRES IN HUC	% OF HUC FROM COUNTY	% OF COUNTY IN HUC
IRON	513200	254300	31	49.6
ASHLAND	673277	301158	36	44.7
BAYFIELD	967023	214377	26	22.2
GOGEBIC	722305	62534	8	8.7

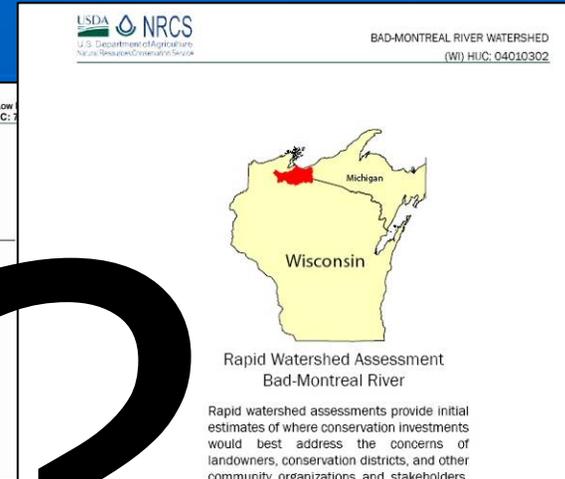
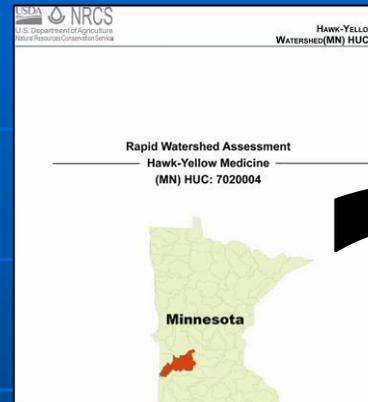
Key Topics

- Product and Representation Decisions
- Crossing Political Boundaries
- Dataset Discussions and Examples
- Data Acquisition
- Automation and Processing Tools



Product Decisions

- Page Size and Layout
- PDF Document of 8½" x 11" sheets?
- Poster-sized, high-resolution copies of maps for presentations or public meetings?
- Series of viewable Web Pages with hyperlinks?



United States Department of Agriculture
NRCS Natural Resources Conservation Service

Minnesota Home About Us News Programs Technical Resources Partnerships Contact Us

Search
Minnesota
Enter Keywords GO

Technical Resources
Electronic Field Office Technical Guide (eFOTG)
National Resources Inventory (NRI)
Soils

Find a Service Center

07020004 (MN) Hawk-Yellow Medicine

The Hawk-Yellow Medicine 8-Digit Hydrologic Unit Code (HUC) is located in the Prairie Parkland Ecological Province of Southwestern Minnesota. This highly agricultural watershed is 1,327,559 acres in size. Available data indicates over ninety six percent of the land within the subbasin is privately owned.

Agricultural census estimates show 2,680 farms in the subbasin. Approximately 25 percent of the operations are less than 180 acres in size, over fifty percent are from 180 to 1000 acres, and the remaining farms are greater than 1000 acres in size. Most of the producers are full time operators and do not rely on off-farm income.

The main resource concerns on the cropland are wind / water erosion and flooding. Additional resource concerns include surface and groundwater quality (mercury, turbidity and fecal coliform), agricultural waste management, sedimentation and declining wildlife habitat.

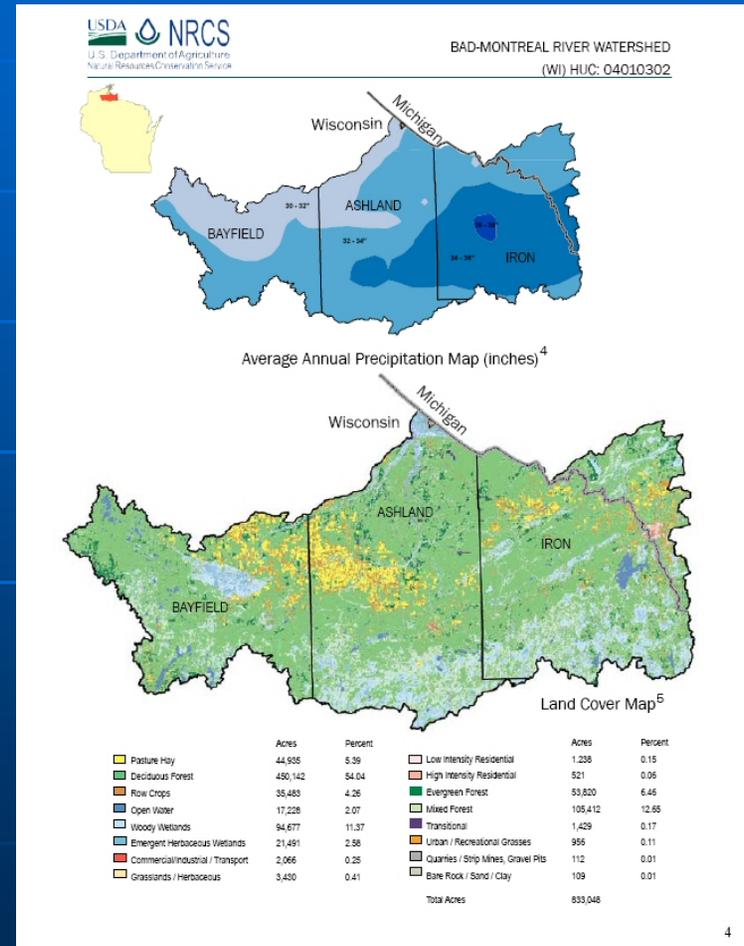
Watershed Overview

8 Digit Hydrologic Unit Code:	07020004
Drainage Area:	1,357,559 Acres
Major Basin:	Minnesota River Basin
Stream Miles:	2,055
2006 303d Stream Miles:	299
Population:	17,054
Farm Count:	2,680
Watersheds Upstream:	Upper Minnesota



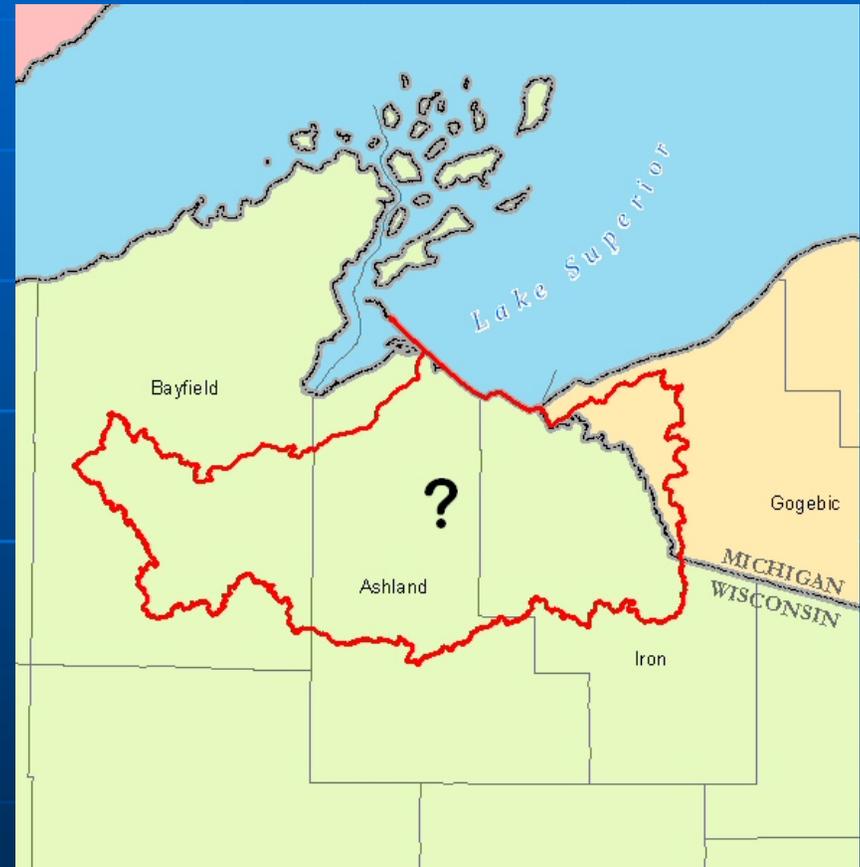
Cartographic Representation Decisions

- Page Size /Graphic Size
- Page Formats
- Resultant Scale -Reclassification?
- Symbology
- Representation across political lines
- Representation *of* political lines
- Create and review drafts!



Crossing Political Boundaries

- Two challenges:
 - Work Process
 - Consistent Data
- Solutions:
 - Share work in a watershed or divide entire watersheds between states
 - Obtain broader, regional or national data as much as possible



Population Data

US Census and Labor Statistics provided by County or Block Group

- Total Population by Block Group
- Total Households
- Median Household Income
- Percent below Poverty level
- Median Home Value

Unemployment Data by county from the Bureau of Labor Statistics

- Queries can be downloaded as GIS / Excel ready .dbf file

The screenshot displays the American FactFinder website interface. At the top, it identifies the U.S. Department of Labor Bureau of Labor Statistics and the U.S. Census Bureau. The main navigation bar includes links for Main, Search, Feedback, FAQs, Glossary, Site Map, and Help. The page is titled "Your source for population, housing, economic, and geographic data". A prominent search box is labeled "Get a Fact Sheet for your community..." and includes fields for "city/town, county, or zip" and "state". Below the search box, there are sections for "Getting Detailed Data" and "What's New". The "Getting Detailed Data" section lists several data sets: Decennial Census, American Community Survey, Puerto Rico Community Survey, Population Estimates Program, Economic Census, and Annual Economic Surveys. The "What's New" section highlights the 2007 Population Estimates for the U.S. and states, the 2006 Puerto Rico Community Survey data, and the 2006 Annual Survey of Manufactures data. A sidebar on the left contains a "POPULATION FINDER" section with a "FACT SHEET" and "ADDRESS SEARCH" option. The "ADDRESS SEARCH" option includes a text input field and a "GO" button. The "What's New" section also features a small image of a woman and a clock icon.

BLS: <http://www.bls.gov/lau/home.htm>

Census: <http://factfinder.census.gov/>

Population statistics for a subbasin can be estimated using weighted averages based on the percent of each county or block group in the watershed

NASS DATA

2002 Agricultural Census Data provided by county

- Farm Count
 - Farms by Size
 - Total Operators
 - Cropland Acres
 - Irrigated Lands
 - Animal Counts
 - Chemical Applications
- Queries can be downloaded as GIS / Excel ready .dbf file

The screenshot displays the USDA National Agricultural Statistics Service (NASS) website interface for the 2002 Census of Agriculture - Volume 1 Geographic Area Series Census, State - County Data. The page is divided into three main steps:

- step 1 select data table:** A dropdown menu is set to "Table 1. County Summary Highlights: 2002".
- step 2 select data items:** A list of data items is shown, including "All Data Rows", "Farms (number)", "Land in farms (acres)", and "Land in farms - Average size of farm (acres)". A note states: "Since some data items are too long for the Data Selection box above, the full text of the first data item highlighted is shown below." Below this, "All Data Rows" is selected.
- step 3 select geographic locations:** This section includes a "Primary Location" dropdown menu (set to "United States"), a "Secondary Location(s)" field (set to "No Location Selected"), and a "Location(s) Selected" field (set to "Click Location to Remove"). An "Add" button is positioned between the secondary and selected location fields. On the right side, there are buttons for "Get Data", "Help", "Main Menu", and "Reset".

http://www.nass.usda.gov/Census/Create_Census_US_CNTY.jsp

Ag statistics for a subbasin can be estimated using a weighted average based on the percent of each county occurring in the selected watershed

Threatened and Endangered Species

- Data Sources: Local data, DNRs NRCS eFOTG Section II, USFWS

- Meant to identify essential habitat and conservation opportunities

- Privacy Issues – Sensitive Data

- Only reflects occurrence in a watershed – locational data is stripped from output

The screenshot shows the NRCS eFOTG website. The header includes the NRCS logo and 'BECKER COUNTY, MN eFOTG'. The main content area is titled 'eFOTG Home Page' and contains a search menu, a table of contents, and several informational sections. The table of contents lists sections I through V, with Section II highlighted. The 'What is eFOTG?' section explains that technical guides are primary scientific references for NRCS. The 'What's Changed Recently' section features a 'Draft eFOTG' notice and a 'State Specific Notices' section.

<http://www.nrcs.usda.gov/technical/efotg/>

Federally Listed Threatened And Endangered Species <small>REG</small>	
ENDANGERED SPECIES	CANDIDATE SPECIES
Fish – Topeka Shiner	Insect – Dakota Skipper
THREATENED SPECIES	Species of Special Concern
Plants – Sullivant's Milkweed, Western Prairie White-fringed Orchid	Plants - Rattlesnake Master
Essential Habitat – -Prairie river and stream habitat for the Topeka Shiner.	

Impaired Waters

Representing 303d Listed Streams and Water Bodies

- Data Availability
- Data Format
- Assessment Methods / Terms
- Multiplicity
- Naming conventions
- Political Boundaries
- Scale

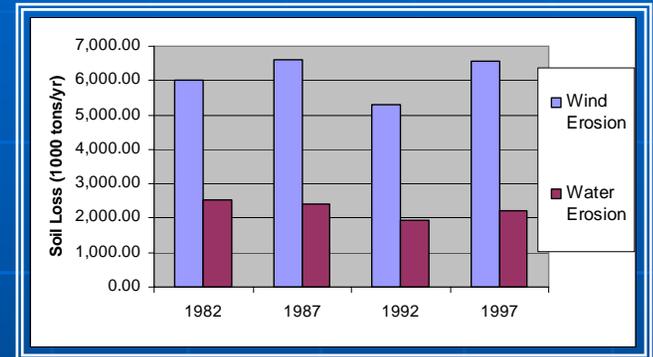
Listed Stream / Reach #	Impairment	Affected Use
Watowan River; Perch Cr to Blue Earth R	Mercury, Fecal Coliform, Turbidity	Aquatic Life, Aquatic Recreation, Aquatic Consumption
Blue Earth River; Le Sueur R to Minnesota R	Mercury, Fecal Coliform, Turbidity	Aquatic Life, Aquatic Recreation, Aquatic Consumption
Elm Creek; Cedar Cr (Cedar Run) to Blue Earth R	Fecal Coliform, Turbidity	Aquatic Life, Aquatic Recreation
Center Creek; Lily Cr to Blue Earth R	Ammonia, Fish BI, Fecal Coliform, Turbidity	Aquatic Life, Aquatic Recreation
Blue Earth River; West Br Blue Earth R to Coon Cr	Mercury, Fish BI, Fecal Coliform, Turbidity	Aquatic Life, Aquatic Recreation, Aquatic Consumption
JD #3; Headwaters to Elm Cr	Low Dissolved Oxygen, Turbidity	Aquatic Life
Cedar Creek; Begin Class 2C to Cedar Lk	Ammonia, Low Dissolved Oxygen	Aquatic Life
Blue Earth River; Willow Cr to Watowan R	Mercury	Aquatic Life
Blue Earth River; East Br Blue Earth R to South Cr	Mercury, Fish BI, Turbidity	Aquatic Life, Aquatic Consumption
Blue Earth River; Rapidan Dam to Le Sueur R	Mercury, Turbidity	Aquatic Life, Aquatic Consumption
Blue Earth River; Watowan R to Rapidan Dam	Mercury	Aquatic Consumption
Blue Earth River; Center Cr to Elm Cr	Mercury	Aquatic Consumption
Blue Earth River; Elm Cr to Willow Cr	Mercury, Fish BI, Turbidity	Aquatic Life, Aquatic Consumption
Blue Earth River; South Cr to Center Cr	Mercury, Fish BI	Aquatic Life, Aquatic Consumption
Blue Earth River; Badger Cr to East Br Blue Earth R	Mercury	Aquatic Consumption
Blue Earth River; Coon Cr to Badger Cr	Mercury	Aquatic Consumption
Blue Earth R, Mid Branch; IA Border to West Br Blue Earth R	Mercury	Aquatic Consumption
Blue Earth River, East Branch; Brush Cr to Blue Earth R	Fish BI	Aquatic Life
Brush Creek; Headwaters to E Br Blue Earth R	Fish BI	Aquatic Life
Blue Earth River, East Branch; Headwaters to Brush Cr	Fish BI	Aquatic Life
Cedar Creek; Begin Class 2C to Cedar Lk	Ammonia, Low Dissolved Oxygen	Aquatic Life
Minnesota River; Blue Earth R to Shanaska Cr	Mercury, Phosphorous, Fecal Coliform, Turbidity	Aquatic Life, Aquatic Recreation, Aquatic Consumption
Minnesota River; Minnesota Cr to Blue Earth R	Mercury, Phosphorous	Aquatic Consumption



Natural Resources Inventory Data

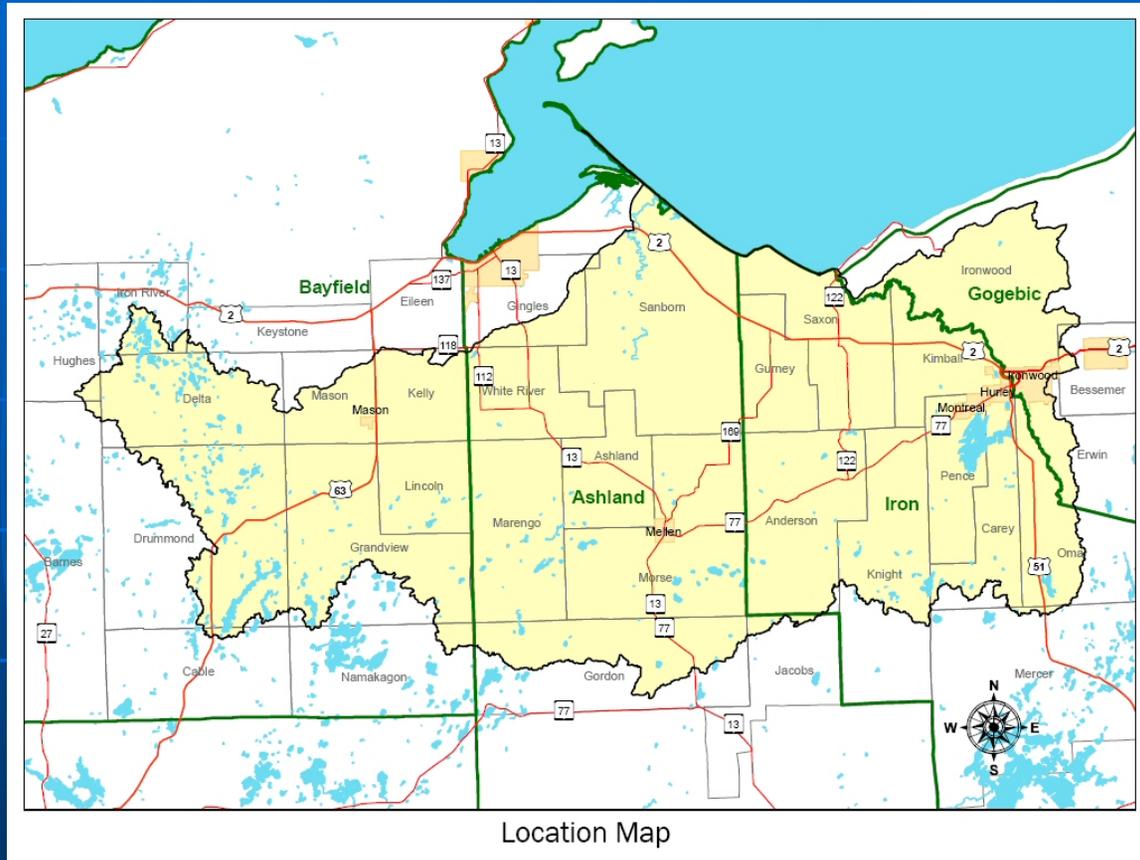
Available by 8-Digit Hydrologic Unit Code

- Wind Erosion Estimates (WEQ)
Rate of Loss in Tons x 1000
% Change over time
- Sheet and Rill Erosion Estimates (USLE)
Rate of Loss in Tons x 1000
% Change over time
- Crop / Pasture Land Capability Class
- Estimated Irrigated Lands



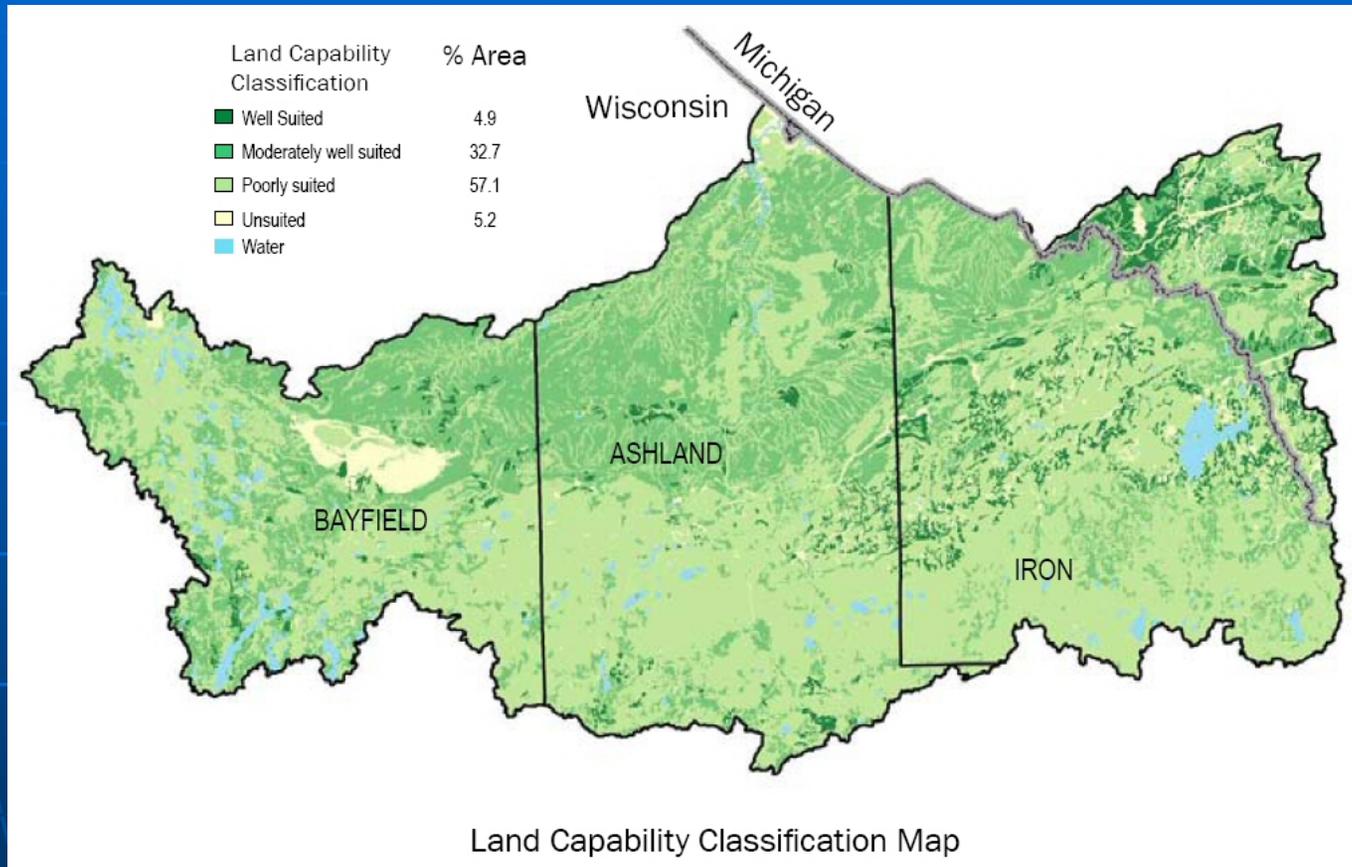
1 - slight limitations	25,800	21%
2 - moderate limitations	80,500	65%
3 - severe limitations	18,500	15%
4 - very severe limitations	0	0%
5 - no erosion hazard, but other limitations	0	0%
6 - severe limitations; unsuitable for cultivation; limited to pasture, range, forest	0	0%
7 - very severe limitations; unsuitable for cultivation; limited to grazing, forest, wildlife habitat	0	0%
8 - miscellaneous areas; limited to recreation, wildlife habitat, water supply	0	0%
Total Croplands & Pasturelands (MN)	124,800	---

Location/Transportation



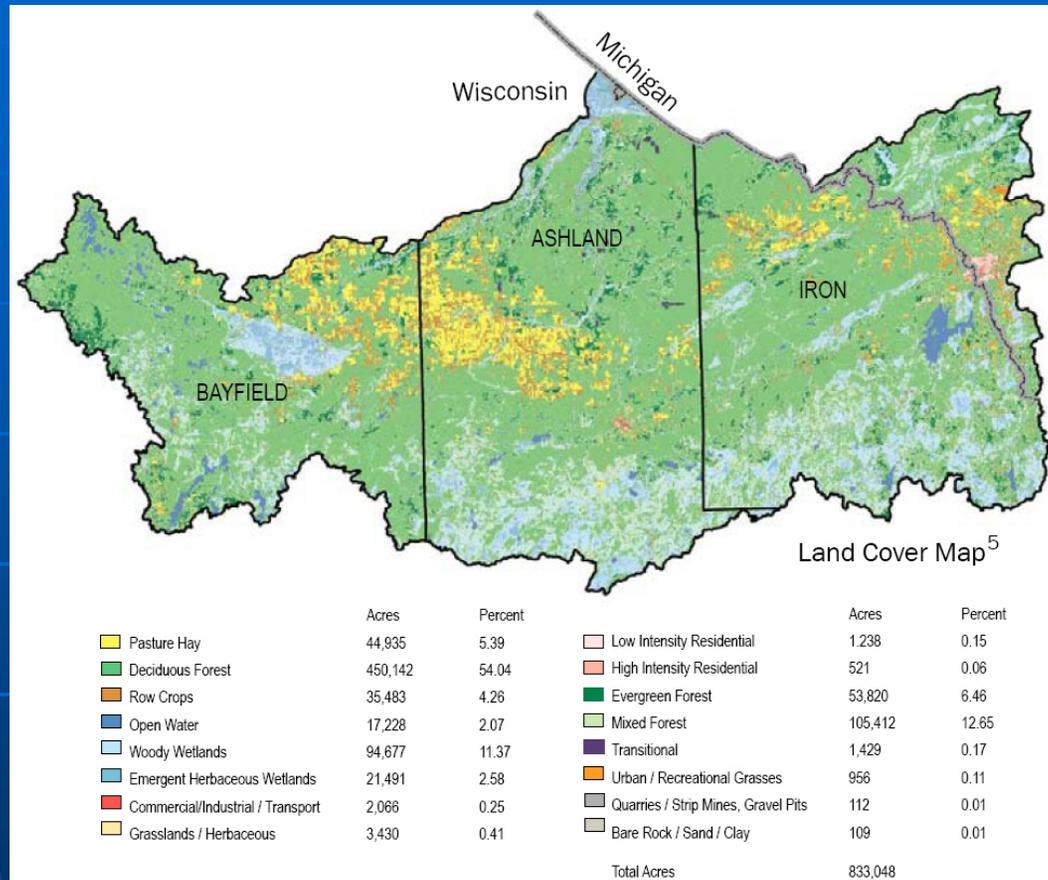
- General overview map, set in the cultural contexts of boundaries and transportation.

Soil Derivatives



- Suitable soils for agriculture as a general overview. The simple thematic map can reveal clusters or voids at a visual level.

NLCD, Standard Classification



- NLCD data with standard legend and classification. Visually, distinctions can be seen, but the data could easily be reclassified for more generalization.

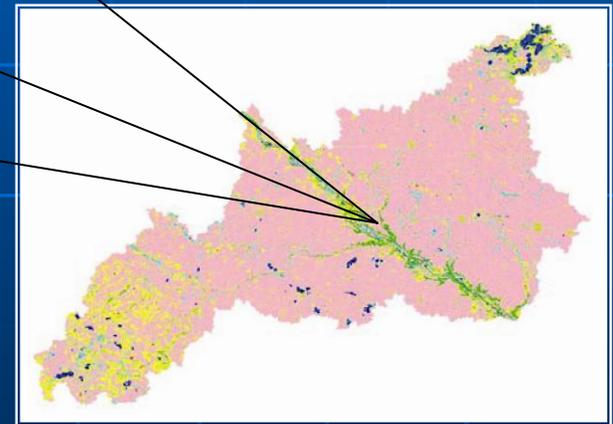
NLCD With Ownership Extraction

Landcover/Use	Public		Private**		Tribal		Total Acres	Percent
	Acres	Percent	Acres	Percent	Acres	Percent		
Forest	650.5	0.05	3,520.93	0.26	0.0	0.00	41772	3.1
Grain Crops	3.8	0.00	1,693.74	0.12	0.0	0.00	1698	0.13
Grass, etc	1,162.9	0.09	167,503.1	12.6	0.0	0.00	168,666	12.7
Orchards	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Row Crops	1,822.4	0.14	1,044,062.19	78.6	0.0	0.00	1,045,884	78.8
Shrub etc	11.1	0.00	1727.14	0.13	0.0	0.00	1,738	0.13
Wetlands	2,190.9	0.17	36,110.73	2.72	0.0	0.00	38,302	2.9
Residential/Commercial	--	--	11,580	0.87	--	--	11,580	0.87
Open Water*	--	--	--	--	--	--	17,968	1.4
Totals:	5,841.7	0.44	1,303,750	98.2	0.0	0.00	1,327,559	100

* ownership undetermined ** Includes Private-major

Estimates Private, Public, and Tribal lands for each land use / land cover type

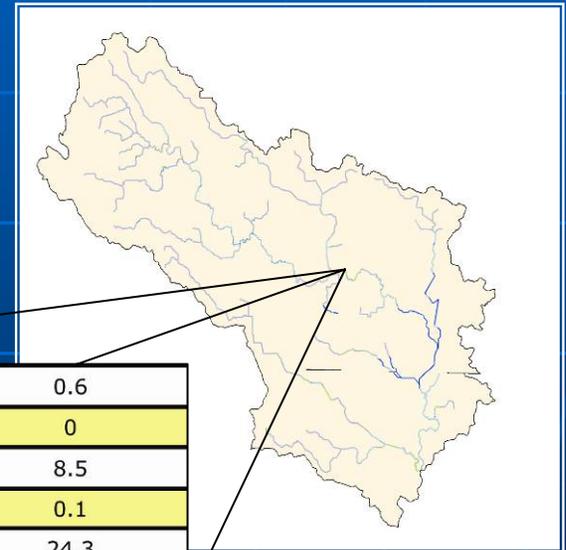
- NLCD Raster data clipped and exported to shapefile format
- Land cover type extracted by Gridcode, reclassified & summarized in acres and percent
- Land cover type extracted to owner class polygons, reclassified & summarized in acres and percent



NLCD and Riparian Areas

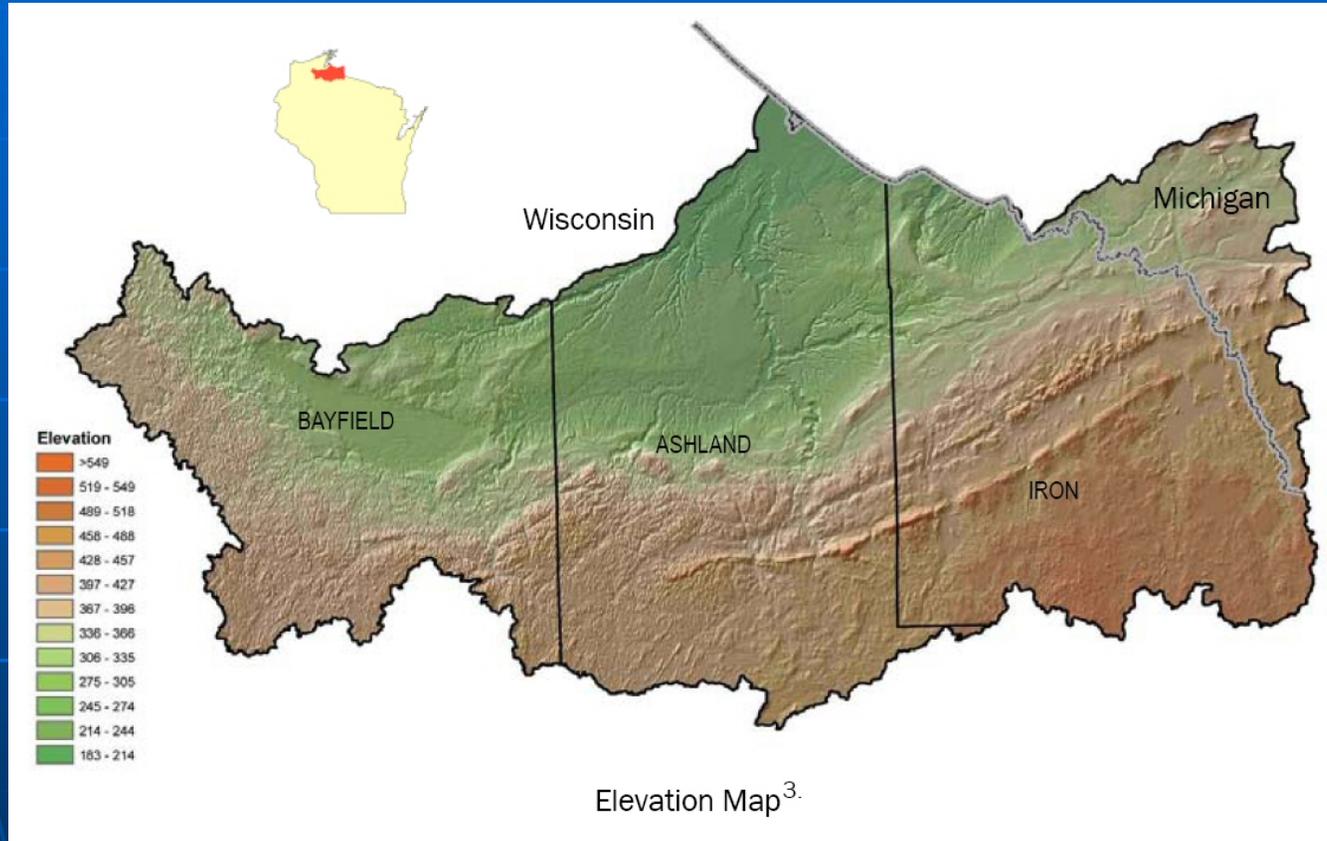
The same process can be used to identify potential Conservation opportunities in Riparian areas

- 100K Stream Data is Buffered to desired distance on all sides
- Land cover type extracted to buffer by Gridcode, reclassified & summarized



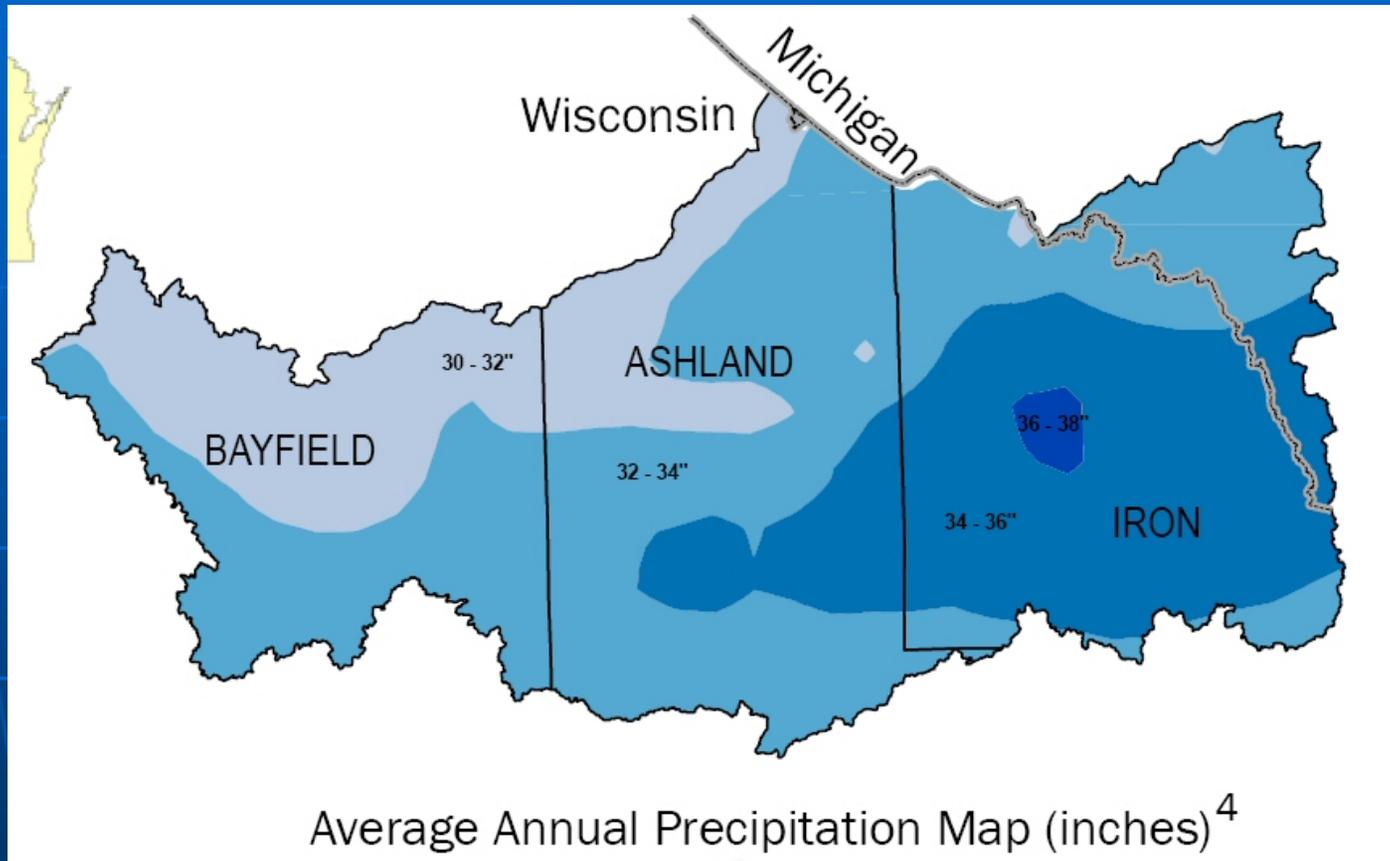
Riparian Land Cover/Land Use ^{/5} <i>(Based on a 100-foot buffer on both sides of all streams in the 100K Hydro GIS Layer)</i>	Dev/Barren	344.3	0.6
	Fallow	0	0
Forest	5,285.1	8.5	
Grain Crops	63.2	0.1	
Grass/Pasture	15,179.1	24.3	
Orchards/Vine	0	0	
Row Crops	31,152.6	49.9	
Shrub/Range	207.7	0.3	
Water	4,303.9	6.9	
Total Buffer Acres	62,421.3	---	

Elevation (NED)



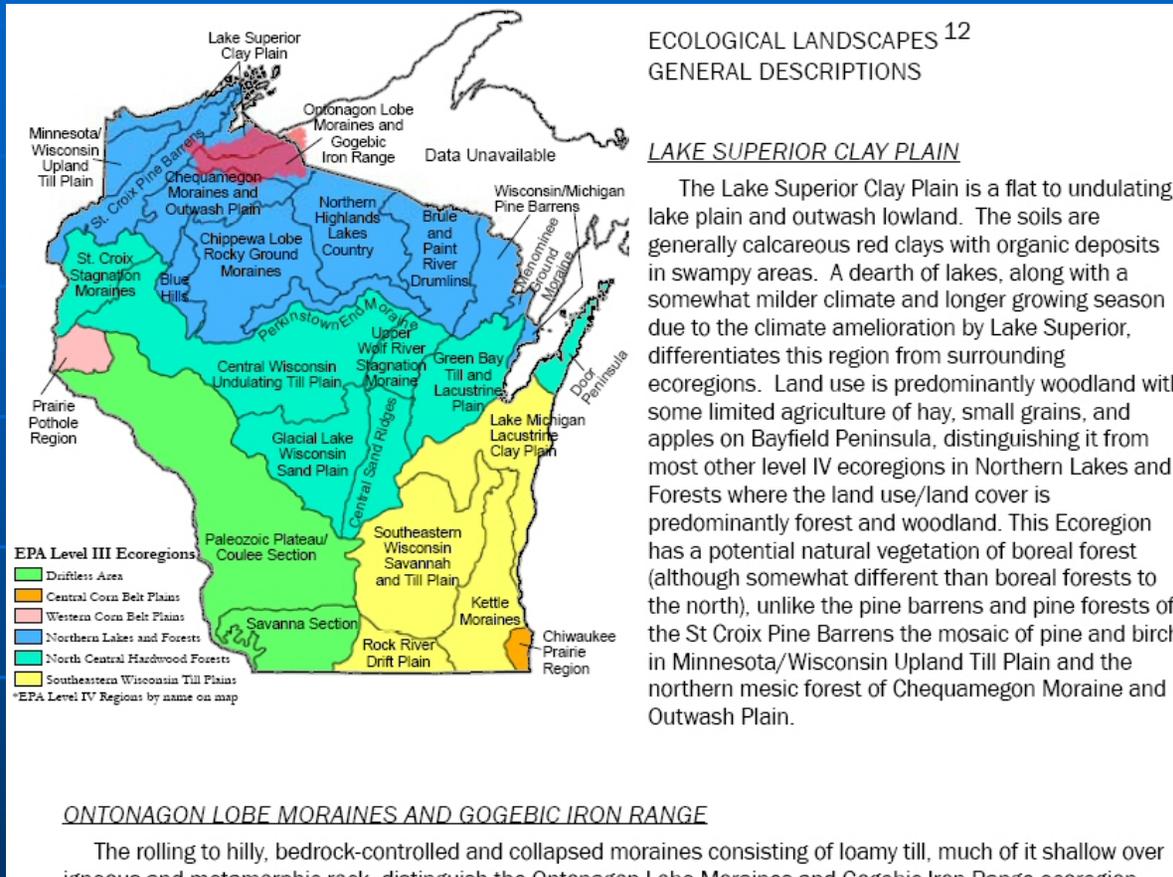
- 30m cell size is typically adequate for an image product at scales for 8-digit sub-basins. Finer resolution needed for local projects is processing time overkill on a product like this.

Precipitation



- A simple thematic map of average precipitation from clipped PRISM data.

Ecological Regions



- EPA Level III and IV Ecological Regions were incorporated instead of other, local datasets.

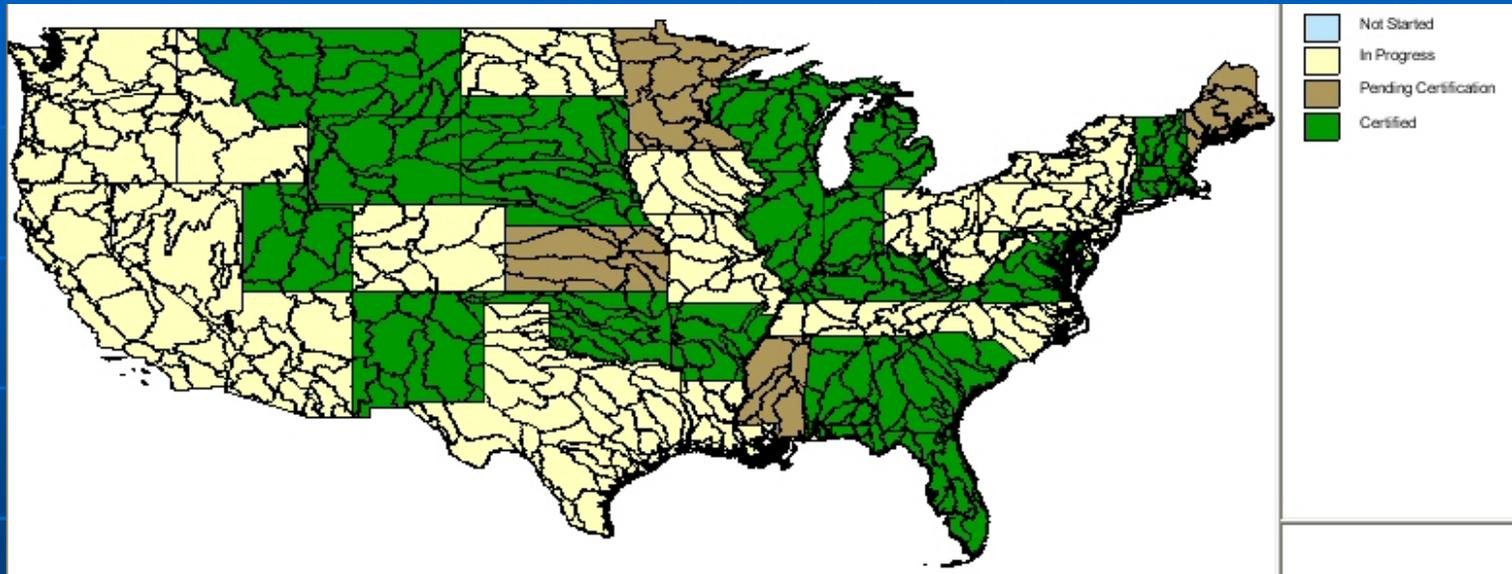
Data Acquisition

- Selecting Watershed Boundaries
 - Updated WBD, or traditional 1:250K data
- NRCS Geospatial Data Gateway
 - Helpful in acquiring a number of regional or national data layers
- PRS Reports
- NED, NLCD, NASS, Census, EPA TMDLs and Ecological Regions, and Local Agencies round out the data sources

Watershed Boundary Dataset

- Complete Information Available at:
 - <http://www.ncgc.nrcs.usda.gov/products/datasets/watershed/>
- Information on WBD:
 - Goal-Develop new national seamless WBD to the 12-digit level based on topographic and hydrologic features
 - Scale: 1:24,000 for 10 and 12 digit product and base data meets or exceeds 7.5 quadrangle sheets
 - Crosses stream at confluence
 - No delineations running down the centerline
 - Cooperative development by many Federal agencies and local partner agencies under the leadership of the Subcommittee on Spatial Water Data
- The WBD will supersede the original 1:250,000 scale hydrologic units at two, four, six, and eight digits. (Use this if it is available to your state.)

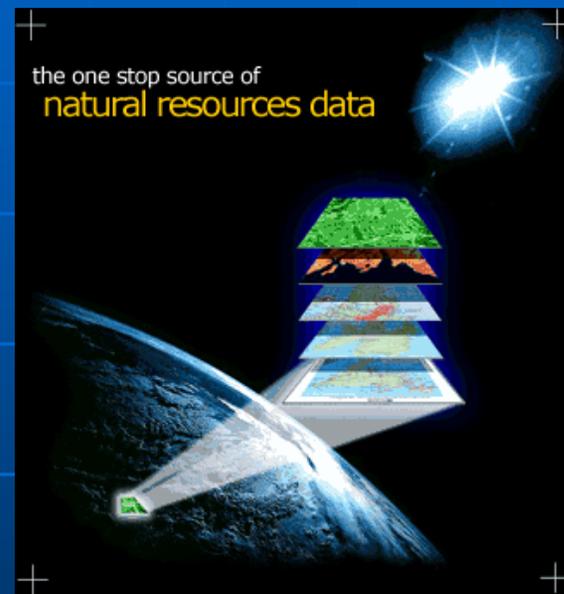
WBD Certified Status Map



- About 24 states completed, 4 pending certification.
- Each of the 48 continental states at least in progress.

NRCS Geospatial Data Gateway

- <http://datagateway.nrcs.usda.gov>
- Use Login (E-auth) for additional data
- Quick Search by State and/or County
- Delivered in states, counties, or regions.
- Matching datasets easily appended
- Dynamap data allowed for map publication uses, not data distribution
- Transportation, hydro lines and areas, political boundaries, blockgroups, WBD, populated places, MLRA, CRA, and precipitation data are all available here.
- View data for consistency and consider replacing any inadequate data with an alternate or local source



PRS Reports

- Reports Section
- Be observant of year when selecting reports
- Many reports can be run by HUC, but older HUC reports are clipped to state lines. This requires running same HUC in all states touched and summarizing data
- To our knowledge, PRS uses the 1:250K HUCs, so data adjustment calculations may be necessary in some cases

The screenshot shows the PRS Reports web application interface. At the top, there is a navigation bar with links for Home, Data Entry, Reports, Tools, FAQ, and Help. Below this is a date indicator: Monday, 3.17.2008. The main content area is divided into two sections. On the left, under the heading "Reports", there is a vertical list of report categories: 2008 Reports, 2007 Reports, 2006 Reports, 2005 Reports, 2004 Reports, 2002 - 2003 Reports, and 1999 - 2001 Reports. A mouse cursor is hovering over the "2007 Reports" link, which has a tooltip that says "2007 Reports Menu". On the right, under the heading "2008 PRS Reports", there is a section titled "1 Conservation Systems" with a sub-heading "Conservation Systems". Below this, there is a brief description: "These reports provide information on conservation systems." and a list of sub-sections: "1.1 Conservation Systems Plans", "1.2 Conservation Systems Acres", and "1.3 CNMPs Written".

The screenshot shows the PRS Reports web application interface with a search form. The form is titled "Report" and has several dropdown menus and input fields. The "Location" dropdown is set to "Wisconsin". The "By" dropdown is set to "County". The "Period" dropdown is set to "FY 2006". The "CNMP" dropdown is set to "All Plans". The "Land Use" dropdown is set to "All Land Uses". The "Resource Concern" dropdown is set to "All Resource Concerns". The "Agency" dropdown is set to "None Selected". The "Map To" dropdown is set to "Applied". There are "Refresh" and "Hide report criteria" buttons. The form is part of the "United States Department of Agriculture Natural Resources Conservation Service" and is a component of the "Integrated Accountability System".

The screenshot shows the PRS Reports web application interface with a search form. The form is titled "Report" and has several dropdown menus and input fields. The "Location" dropdown is set to "04-Great Lakes". The "Program" dropdown is set to "National". The "State Program" dropdown is set to "01-New England". The "Period" dropdown is set to "03-South Atlantic-Gulf". The "CNMP" dropdown is set to "04-Great Lakes". The "Land Use" dropdown is set to "05-Ohio". The "Resource Concern" dropdown is set to "07-Upper Mississippi". The "Agency" dropdown is set to "08-Lower Mississippi". The "Map To" dropdown is set to "10-Missouri". There is a checkbox labeled "Use two-digit Hydrologic Unit Code as Location" which is checked. There are "Refresh" and "Hide report criteria" buttons. The form is part of the "United States Department of Agriculture Natural Resources Conservation Service" and is a component of the "Integrated Accountability System".

Other Data Websites

- NED – 30m, <http://ned.usgs.gov/>
 - Also from NRCS Data Gateway
- NLCD – 30m, Links to the 1992 and 2001 NLCD:
<http://landcover.usgs.gov/landcoverdata.php#regional>
 - Class definitions:
<http://landcover.usgs.gov/classes.php>
 - Also from NRCS Data Gateway
- NASS – Build custom query online and download results
 - <http://www.nass.usda.gov/>

Other Data Websites (cont'd.)

- Census
 - Home - <http://www.census.gov/>
 - Cites - <http://www.census.gov/popest/cities/SUB-EST2005-4.html>
- EPA TMDL - <http://www.epa.gov/owow/tmdl/>
- EPA Ecological Regions - http://www.epa.gov/wed/pages/ecoregions/level_iv.htm
- Local Agencies – i.e. DNR, DOT

Processing Tools

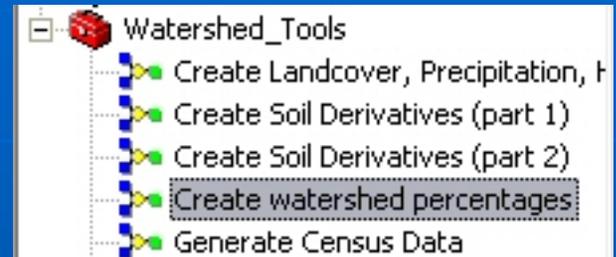
- ArcGIS (ArcCatalog and ArcMap)
- MS Word – Convert portions of document body or lists from Word.
- MS Access – Soils databases or other locally constructed databases
- MS Excel – Numerous tables
- Adobe InDesign – Brings everything together for publication finishing

GIS Automation Tools

- Develop Models in ArcGIS

- Review available data
- Design the process of models by identifying starting data and desired resulting data.
- Build the flow steps to go from starting data to finished or near-finished data.
- Convert the “algorithm” of model logic into an actual model using Model Builder in ArcGIS

- Additional automation tools – Python, Access, Excel



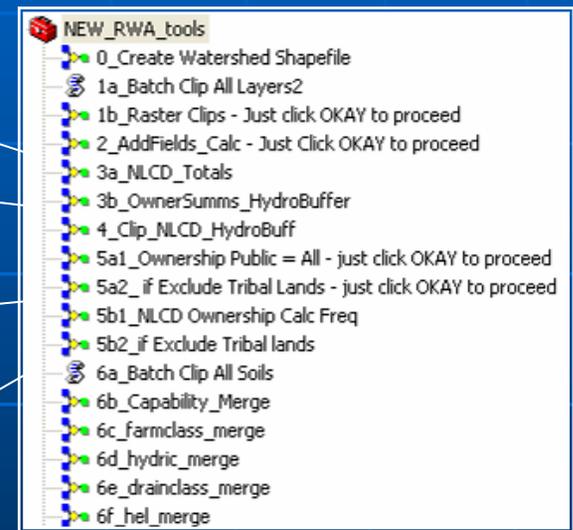
GIS Automation Tools: Tips

Batch Clip Layers wherever Possible (Python Scripts)

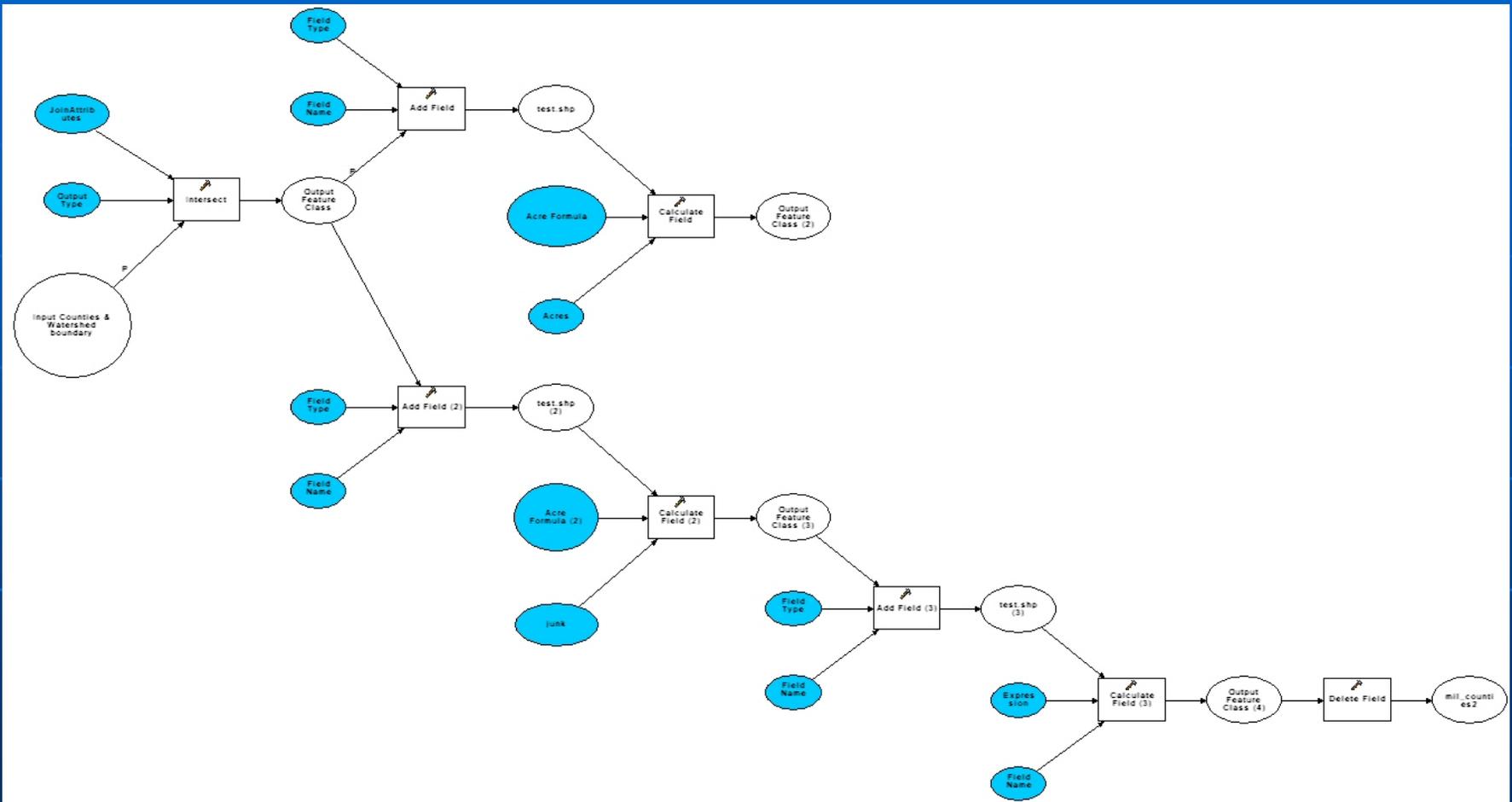
Automate Time Consuming Raster Processing Tasks

Generate Summary Statistics to minimize user input and calculations

Create ready to use tables for easy importing into resource profiles



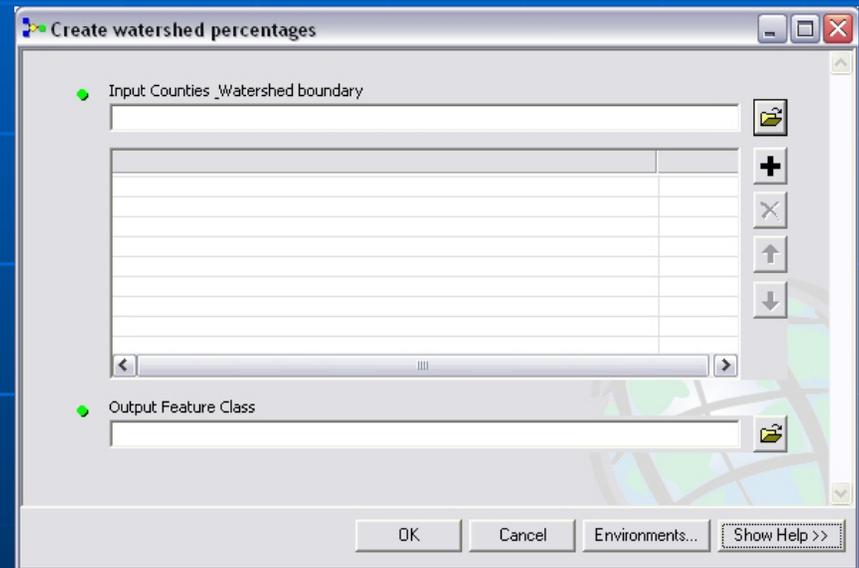
Example Model (Early Form)



- Model to intersect watershed and local county area data to calculate acres and various percentages of shared area

Dialogue Screen For Same Model

- This model needs two input layers – county polygons that touch the watershed and the watershed boundary polygon
- Input watershed requires an up to date acres calculation
- Model needs an output layer specified.
- Related table exported from output layer

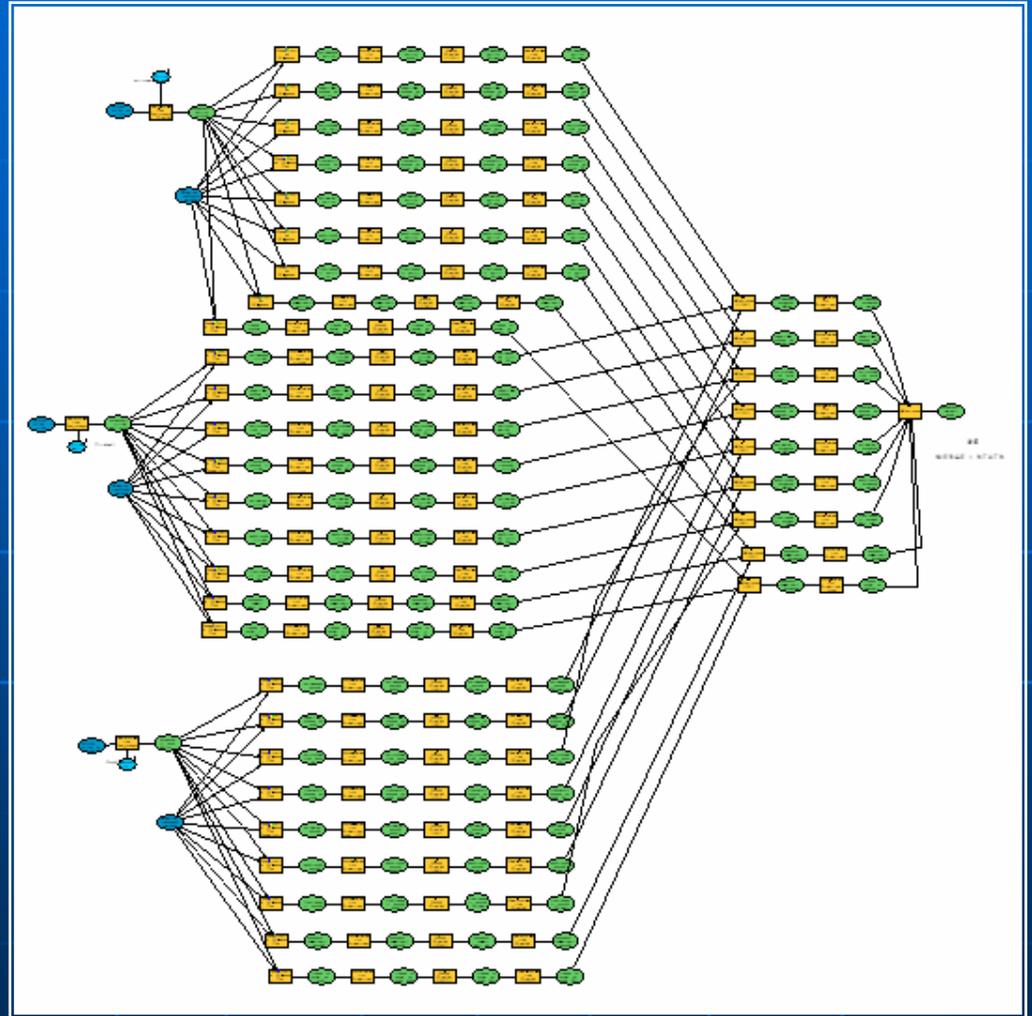


Example Model



Calculates acres by ownership type and land cover type

Gives total acres and percentages occurring within each ownership class polygon



Model to extract and calculate land cover / land use by ownership type

Models and ArcGIS Versions

- Models may require slight tweaks between ArcGIS versions 8.3, 9.1, and 9.2.
- When experiencing difficulty with a model:
 - Validate the Model – Review any errors
 - Double-check tools in the model builder by opening the tool and making sure it's loading the correct Toolbox function with correct parameters.
 - Also in the components or functions in the model – check file names being used. Duplicate names generally result in a fault or error, as will too many characters in pathname.

Automation Tools – MS Excel

Build an Excel workbook housing any Tabular data for the project

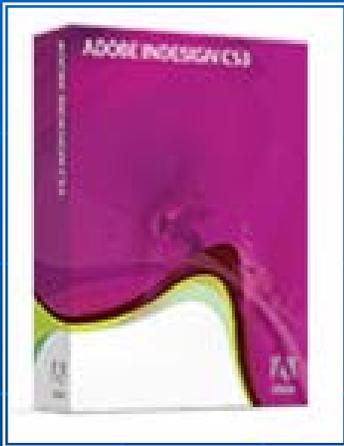
Use Macros, Lookup Functions and formulas to perform analysis

Use macros to open selected dbf files from GIS steps and import results directly into tables for resource profile

	A	B	C	D	E	F	G	H	I	J	K
1											
2	CTY_NAME	Otter Tail	Grant	Douglas	Stevens	Stearns	Pope	Swift	Kandiyohi	Chippewa	
3	COUNTYFIPS	111	051	041	149	145	121	151	067	023	#N/A
4	Co Acres	1423942	368560	460936	368351	889263	458945	481445	551868	376398	#N/A
5											
6	Co_acresin_WS	104184800.7	104256199.1	751966735.5	216949695.7	248851.1303	1591779033	1511569466	386485525.8	729209922	
7	WS_Acres(huc)	1,333,546	1,333,546	1,333,546	1,333,546	1,333,546	1,333,546	1,333,546	1,333,546	1,333,546	1,333,546
8	%COinWS	7313%	26287%	163143%	58899%	28%	346834%	313965%	70032%	193734%	-
9	%WSinCO	7813%	7818%	56390%	16269%	19%	119364%	113350%	28982%	54682%	0%
10	CO_Pop	57,159	6,289	32,821	10,053	133,166	11,236	11,956	41,203	13,088	-
11		4,162,122	1,778,998	53,545,254	5,920,970	37,265	38,970,303	37,537,699	28,855,362	25,355,866	-
12	WS_POP	196,183,861	196,183,861	196,183,861	196,183,861	196,183,861	196,183,861	196,183,861	196,183,861	196,183,861	196,183,861
13	Co_Unemploy	0.048	0.051	0.038	0.033	0.04	0.038	0.045	0.039	0.038	-
14											
15	WS_Unemploy	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
16	Co_income	35395	33775	37703	37267	42426	35633	34820	39772	35582	-
17											
18	WSincome	36,930	36,930	36,930	36,930	36,930	36,930	36,930	36,930	36,930	36,930
19	Co_%belowpov	0.101	0.084	0.085	0.136	0.09	0.088	0.084	0.09	0.086	-
20											
21	WS%pov	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
22	valu home	84000	52900	102300	67100	100300	74100	58200	90400	62200	-
23											
24	wsvalhome	76,833	76,833	76,833	76,833	76,833	76,833	76,833	76,833	76,833	76,833
25	Co_farms	3013	606	1177	556	3152	924	807	1296	694	-
26		220450.5897	171422.0098	1920196.344	327470.3406	882.0548733	3204749.02	2533700.518	900614.5609	1344511.833	-
27	WS_farms	10,623,997	10,623,997	10,623,997	10,623,997	10,623,997	10,623,997	10,623,997	10,623,997	10,623,997	10,623,997
28	Co_operators	3013	606	1177	556	3152	924	807	1296	694	-
29	ws_operators	10623997	10623997	10623997	10623997	10623997	10623997	10623997	10623997	10623997	10623997
30	#prim_farm	1721	407	663	387	2128	598	599	753	471	-

Careful thought and design will save countless hours of data retrieval!

Product Design and Publishing



Copyright © 2008 Adobe Systems Incorporated.

InDesign integrates smoothly with other members of the Adobe® software family, and works well with dbf and xls tables.

Create Multi-resolution .pdf files for Print and Web

Generate Web Pages Directly from RWA Documents

Tables and Map Images can be updated automatically

This translates to ease in creating, updating, and maintaining Resource Profiles as new data becomes available, and in providing multiple formats should the need arise.

Questions?

Contact Information

- Peter Mead

Soil Conservation Technician, MN State Office

Phone: 651-602-7928

peter.mead@mn.usda.gov

- Chris Morse

Area GIS Specialist, SE Wisconsin

920-386-9999, ext. 124

chris.morse@wi.usda.gov